

C158?

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River formation from Shell Oil Company's  
Greeno No. 2 corehole drilled in 1962 in NE1/4NE1/4 sec. 4,  
T. 3 S., R. 97 W., Rio Blanco County, Colorado (818 ft  
S of N line and 523 ft W of E line)

Described intervals 1,215.0 to 1,230.0,  
1,251.0 to 1,273.0, and 1,999.5 to  
Surface elevation 6,413 feet 2,060.1 feet

From	To		Description
1215.0	1223.0	5.1 feet	Oil shale, rich and medium: dark to some medium brownish-gray and rare brownish-black (10YR 2/2-3/2, some 4/2-4/3, rare 1/2). Very faint to faint irregular, distorted and some slightly contorted laminations; some streaked bedding. Slightly irregular to very irregular thick parting; some very irregular fracture. Some vertical fractures with fine white fillings. Some irregular distorted, medium to dark brownish-gray, silty tuff stringers at 1216.8 to 1218.0 feet. Rare very fine waxy to vitreous black streaks. Very rare small brownish-gray silty tuff (?) lenses.
1223.0	1224.4	1.3 feet	Oil shale, medium: medium to dark brownish-gray (10YR 5/3-3/2). Faint slightly irregular and distorted laminations to <u>very</u> faint streaked bedding. Very irregular parting and fracture. Very common fine intersecting fractures filled with white calcite.
1224.4	1225.3	0.9 foot	Oil shale, medium or rich: medium to dark brownish-gray (10YR 4/2-3/2, rare 2/2). Very faint slightly irregular and distorted laminations. Slightly irregular to very irregular thick parting; some very irregular fractures. Some fine fractures filled with white calcite.
1225.3	1226.7	Missing	
1226.7	1230.0	1.5 feet	Oil shale, medium: medium to dark brownish-gray (10YR 4/2-3/2, rare 2/2). Very faint slightly distorted streaked bedding to very faint laminations. Very irregular parting and fracture. Common zones of earthy to gritty brownish-gray (10YR 5/3) porous collapse breccia.
1230.0	1251.0	Not cored	
1251.0	1252.5	1.2 feet	Marlstone: medium to light olive-gray (5Y 5/2-7/2). Regular smooth laminations to faint streaked bedding. Very regular to slightly irregular, thick to medium and some thin shaly

*This is in B Groove*

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Laramie Petroleum Research Center, Laramie, Wyoming

May 1, 1963

*B Groove  
in Green  
1248-1261.5*

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Core samples of Shell Oil Company's Greeno No. 2 corehole (Con.)

From	To		Description
			parting. Very common fine disseminated dull black flecks and bronze submetallic masses. Rare fine pyrite streaks and blebs in lower part with some fine solution cavities. Sample of marlstone with black flecks and sub-metallic masses from 1251.4 feet: X-ray - feldspar, dolomite, illite.
1252.5	1253.0	Missing	
1253.0	1255.5	1.7 feet	Oil shale, lean: medium and rare light olive-gray (2.5Y 5/3-4/3, rare 6/3). Massive; some slightly irregular distorted and displaced laminations in upper part. Regular to very irregular, thick to medium parting; some very irregular fracture. Common thin vuggy brecciated zones with some white to gray calcite fillings and fine pyrite in middle part. Common fine chalky white specks and streaks in lower part - some partly dissolved. Sample of shale with chalky white specks from 1255.4 feet: X-ray - dolomite, calcite, feldspar, quartz, illite.
1255.5	1256.0	Missing	
1256.0	1258.6	1.9 feet	Oil shale, rich or very rich: dark and some medium brownish-gray to brownish-black (10YR 2/2-1/2, some 3/2-4/2). Fairly distinct to faint, irregular distorted streaks and stringers. Slightly irregular to very irregular thick parting. Some small irregular solution cavities in upper part. A 3/4-inch empty radiating nahcolite vug near base. Rare fine brown crystalline calcite streaks and stringers.
1258.6	1259.0	Missing	
1259.0	1260.0	0.9 foot	Oil shale, medium: medium to dark brownish-gray and rare brownish-black (10YR 4/2-2/2, rare 1/2). Fairly distinct very irregular, distorted to contorted laminations; rare poorly formed loop structures. Regular to slightly irregular thick shaly parting. Rare tan earthy tuff (?) lenses with some pyrite. Sample of tan tuff lens with pyrite from 1259.7 feet: X-ray - feldspar, marcasite, dolomite, quartz.

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From	To		Description
1260.0	1262.0	1.6 feet	Oil shale, lean to very lean: medium to dark and some light brownish-gray (10YR 5/3-3/2, some 6/3, rare 2/2). Distinct irregular, distorted and rare displaced laminations. Slightly irregular to very regular, thick to medium shaly parting. Rare thin gray silty laminae and streaks.
1262.0	1263.0	0.9 foot	Oil shale, very rich to rich: medium to dark brownish-gray (10YR 4/2-2/2; rare slight olive tint), common resinous to waxy luster in upper 0.4 foot. Very irregular, distorted to slightly contorted laminations, streaks, and stringers. Irregular to very irregular thick parting; rare vuggy parting surfaces. Rare brown to tan tuff stringers and lenses (like 1259.7 feet).
1263.0	1264.9	1.8 feet	Oil shale, rich: medium to dark brownish-gray (10YR 4/3-3/2, some 2/2), rare resinous luster. Very irregular, distorted to contorted and folded laminations, streaks, and stringers; rare loop structures. Irregular thick to medium parting. Some thin tan to buff tuff stringers in upper 0.3 foot. Very rare, very small nahcolite (?) cavities.
1264.9	1265.9	Missing	
1265.9	1267.1	1.0 foot	Oil shale, rich: medium to dark brownish-gray (10YR 4/3-2/2), very rare resinous luster. Distinct very irregular and contorted to slightly distorted laminations; rare loop structures. Some small to medium solution cavities at top. Slightly irregular to regular thick parting. Some laminae make an angle of about 70-80 degrees with edge of core.
1267.1	1267.5	0.4 foot	Tuff: buff (10YR 7/3-6/3), chalky to silty. Faint distorted streaked bedding. Common fine brown specks and very fine black streaks. Rare very fine disseminated pyrite. Sample of tuff from 1267.3 feet: X-ray - feldspar, quartz, dolomite, calcite.
1267.5	1272.1	3.6 feet	Oil shale, rich, medium and some lean: medium to dark and rare light brownish-gray (10YR 4/2-2/2, some 5/2, rare 6/2-7/3), rare resinous luster. Faint to very distinct, distorted to contorted laminations; some small to large,

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From	To		Description
			well formed loop structures. Regular to very irregular, thick to medium parting. Common contorted buff tuff stringers at 1268.2 to 1268.3, 1269.5, and 1270.2 to 1270.3 feet. Some fine gray silty laminae in middle part.
			Sample of tuff stringer with gray silty lenses from 1269.5 feet: X-ray - feldspar, calcite, dolomite, pyrite, quartz.
1272.1	1273.1	0.8 foot	Oil shale, medium or rich: dark brownish-gray (10YR 3/2-3/3, rare 2/2). Faint distorted streaked bedding. Irregular thick parting. Very common fine crystalline spots with pyrite in lower part. (May belong with section 1999.5 to 2060.1 feet.)
			Sample of shale with crystalline spots and pyrite from 1272.9 feet: X-ray - calcite, feldspar, dolomite, quartz, pyrite.
1273.1	1999.5	Not cored	
1999.5	2003.0	3.5 feet	Oil shale, medium: dark and rare medium brownish-gray (10YR 3/2, rare 2/2 and 4/2). Very faint slightly irregular and distorted laminations and streaked bedding; rare loop structures. Regular to irregular, thick to thin shaly parting. Rare medium to large, fine crystalline nahcolite masses with pyrite (1999.7, 2000.5 and 2002.3 feet). Some rich resinous oil-shale stringers at 2002.0 to 2002.3 feet.
2003.0	2008.0	4.8 feet	Oil shale, lean: dark and rare medium brownish-gray (10YR 3/2, some 2/2, rare 4/2). <u>Very</u> faint to faint, irregular, distorted and some contorted laminations. Common large to <u>very</u> large coarsely crystalline radiating nahcolite masses with rare pyrite. Slightly irregular to very irregular, thick to medium and rare thin parting. Rare dense brown dolomite bands.
2008.0	2010.0	2.0 feet	Oil shale, medium: dark brownish-gray (10YR 3/2-2/2, rare 3/3). <u>Very</u> faint irregular, distorted to contorted laminations. <u>Very</u> irregular thick to medium parting; some very irregular fracture. Some very large coarsely crystalline radiating nahcolite masses.

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# LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of Shell Oil Company's Greeno No. 2 corehole (Con.)

From	To		Description
2010.0	2012.0	2.0 feet	Oil shale, medium: dark brownish-gray (10YR 3/2-2/2, very rare 3/3). Very faint irregular and distorted to smooth laminations. Slightly irregular to very regular, thick to thin shaly parting. Some 1/4- to 1-inch irregular bands of brownish-gray to buff and rare gray, fine grained nahcolite. Sample of fine grained nahcolite band from 2011.0 feet: X-ray - dolomite, nahcolite, quartz, calcite.
2012.0	2013.0	1.0 foot	Oil shale, lean: dark brownish-gray (10YR 3/2, some 3/3). Faint slightly irregular and distorted to smooth laminations. Irregular to very regular, thick to medium shaly parting. Very common fine laminae to 2-inch irregular bands of gray to brownish-gray fine grained nahcolite.
2013.0	2016.0	3.0 feet	Oil shale, lean and some medium: dark brownish-gray (10YR 3/2-2/2, some 3/3). <u>Very</u> faint streaked bedding to faint distorted laminations. Regular and some irregular thick shaly parting. Some to very common, thin to thick, irregular bands and stringers of brown to buff, fine grained and rare dense massive nahcolite; rare large coarsely crystalline radiating nahcolite masses. Rare very fine disseminated pyrite.
2016.0	2017.0	1.0 foot	Oil shale, medium: dark brownish-gray (10YR 3/3-2/2). Very faint irregular, distorted to contorted laminations, stringers, and streaks. Slightly irregular to very irregular, thick to medium parting. Some medium to large, fine crystalline, radiating nahcolite masses and rare irregular fine grained stringers.
2017.0	2018.5	1.4 feet	Oil shale, lean: dark and some medium brownish-gray (10YR 3/2-3/3, some 4/3). Faint very irregular, distorted to very contorted laminations, streaks and stringers. Slightly irregular to very irregular thick parting. Common very irregular, thin to thick stringers and rare lenses of fine to medium grained nahcolite. Some very fine disseminated pyrite.
2018.5	2020.9	2.4 feet	Oil shale and nahcolite: dark brownish-gray (10YR 3/2-3/3) oil shale with very irregular, distorted to very contorted streaks and stringer. <u>Very</u> common, very large irregular masses and contorted stringers of medium to coarsely crystalline brown to black nahcolite. Common fine pyrite blebs and streaks.

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From	To		Description
2020.9	2023.9	3.0 feet	Oil shale, lean: medium and some dark brownish-gray (10YR 4/2-5/3, some 3/2). Very faint, very irregular, distorted to contorted laminations, streaks and stringers. Slightly irregular to very irregular thick parting. Some to common stringers and very large masses of medium to coarsely crystalline nahcolite (2021.9 to 2022.6 is all nahcolite).
2023.9	2030.0	6.1 feet	Oil shale, lean: medium to rare light and dark brownish-gray (10YR 4/3-5/2, rare 6/2 and 3/2-3/3). Very faint to faint, irregular, distorted to contorted laminations. Very irregular thick parting. <u>Very</u> common, very large coarsely crystalline radiating nahcolite masses and some medium grained stringers. Rare pyrite.
2030.0	2033.7	3.6 feet	Oil shale, lean: medium to rare light brownish-gray (10YR 4/3-5/2, rare 6/2). Faint to very faint, irregular, distorted and some contorted laminations, streaks, and stringers. Very common, very irregular thick stringers of fine to medium grained nahcolite; rare large radiating nahcolite masses. Rare very fine pyrite blebs.
2033.7	2036.8	3.1 feet	Oil shale, lean: medium to dark brownish-gray (10YR 4/3-3/2, rare 5/2-5/3 and 2/2). Faint very irregular, distorted to contorted streaks and stringers. Irregular thick parting. Some to very common (middle sample) very irregular nahcolite stringers and large disseminated crystals; rare large radiating masses.
2036.8	2038.0	1.2 feet	Oil shale, lean or medium: medium to dark brownish-gray (10YR 4/3-3/3 and 3/2). Faint irregular distorted streaks and stringers. Very irregular thick parting. Rare small tan dolomite lenses.
2038.0	2038.7	0.7 foot	Nahcolite: tan to black. Intergrown medium to coarse grained disseminated crystals with common fine shale interstices. Very irregular parting. Rare pyrite.
2038.7	2041.0	2.3 feet	Oil shale, medium or lean: medium to dark brownish-gray (10YR 4/3-3/3, rare 3/2). Faint very irregular, distorted streaks and stringers. Irregular thick parting. Some very small to medium, coarsely crystalline nahcolite masses. Rare pyrite.

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From	To		Description
2041.0	2046.0	4.9 feet	Oil shale, lean: medium and rare dark brownish-gray (10YR 4/3, rare 3/3-3/2). Very faint irregular, distorted to contorted streaks and stringers. Irregular thick parting. Some to common, small to very large, very coarsely crystalline nahcolite masses - some are very irregular with common thin to fine shale interstices. Rare disseminated pyrite and pyrite rims.
2046.0	2052.5	6.5 feet	Oil shale, medium and rich: medium to dark brownish-gray (10YR 4/2-3/2 and 4/3-3/3, some 2/2), very rare resinous luster. Very faint to faint, streaked bedding and very irregular distorted laminations, streaks, and stringers. Very regular to irregular thick parting. Very rare tan earthy tuff lenses and stringers. A large mass of very coarse intergrown nahcolite crystals at 2048.5 to 2048.8 feet; some coarse nahcolite crystals at 2051.1 to 2051.3 feet. Rare small pyrite blebs. Some vitreous black organic material (plant fossil?) on parting surface at 2047.8 feet.
2052.5	2053.5	1.0 foot	Oil shale, rich: dark brownish-gray (10YR 3/2-2/2, rare 3/3), some resinous to waxy luster near top. Faint to very faint, irregular, distorted to contorted streaks and stringers. Slightly irregular to very irregular thick parting. Rare small pyrite blebs. Some disseminated nahcolite in lower part.
2053.5	2058.0	4.5 feet	Oil shale, medium: medium to dark brownish-gray (10YR 4/2 and 4/3-3/3, rare 3/2-2/2). Very faint distorted to contorted streaks and stringers. Irregular to very irregular thick parting. Very common to some, very large to medium nahcolite masses and some disseminated crystals. Some pyrite rims and fine blebs.
2058.0	2060.1	2.1 feet	Oil shale, medium to lean: medium to dark brownish-gray (10YR 4/3-3/2, some 5/3, rare 2/2), very rare resinous luster. Very irregular, distorted to contorted and displaced laminations; rare loop structures. Slightly irregular to very irregular thick parting. Common large to very large, coarsely crystalline nahcolite masses (some radiating) with some pyrite.
2060.1			Bottom of cored section.

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